

METER UNIT
TYPE: 70 and 70/R

INSTRUCTION MANUAL

DYMAR ELECTRONICS LIMITED,
REMBRANDT HOUSE, WHIPPENDELL ROAD, WATFORD, HERTS, ENGLAND.

D Y M A R

M E T E R U N I T

T Y P E : 70 and 70/R

C O N T E N T S

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1. General

The type 70 Meter Unit provides comprehensive power supply and metering facilities for the Dymar range of Plug-In Laboratory Instruments.

The Meter Unit is available in both bench top and rack mounting versions. Electronically both versions are identical, consequently, the circuit diagram supplied applies to either version.

2. Specification:-

Meter:	Precision 5" scale movement calibrated to $\pm 1\%$ fitted with anti-parallax mirror.	
Sensitivity:	100 μ A full scale deflection.	
Terminal Impedance:	3.16 Kilohms temperature compensated to better than 0.2% between + 10 + 50°C.	
Scales:	0-10 Linear 0-3.16 Linear -12 to + 2 dbm. Logarithmic (0 dbm = 0.775 volts in 600 Ω)	
Power Supply:	Input Taps: 105, 115, 125, 135 Volts AC 210, 220, 230, 240 Volts AC	
Output Voltages:	250 volts DC at 50 mA regulated 12.6 DC at 0.6 A regulated 6.3 volts AC at 1.5A 12.6 volts AC at 0.6A (centre tapped)	
Regulation:	250 volt 1%	12.6 volt 1% at max. rated load
Stability:	1%	1% $\pm$ 10% on Mains voltage.
Ripple Voltages:	10 mV r.m.s. 5 mV r.m.s. All supplies floating with respect to chassis ground.	
<u>Dimensions</u>	Type 70	Type 70/R
Width:	10 $\frac{1}{2}$ "	19"
Depth:	8 $\frac{1}{2}$ "	7 $\frac{3}{4}$ "
Height:	13"	7"
Average weight with Plug-In:	17-lb.	16-lb.

2.

3. Operation:

3.1. Input Voltage: The instrument is supplied with the transformer taps set for 240 Volts AC mains input: for use at other voltages change the input taps to the required voltage as illustrated in Fig.1. Connect the instrument to the mains via the three core lead supplied.

Red = Live Black = Neutral Green = Earth

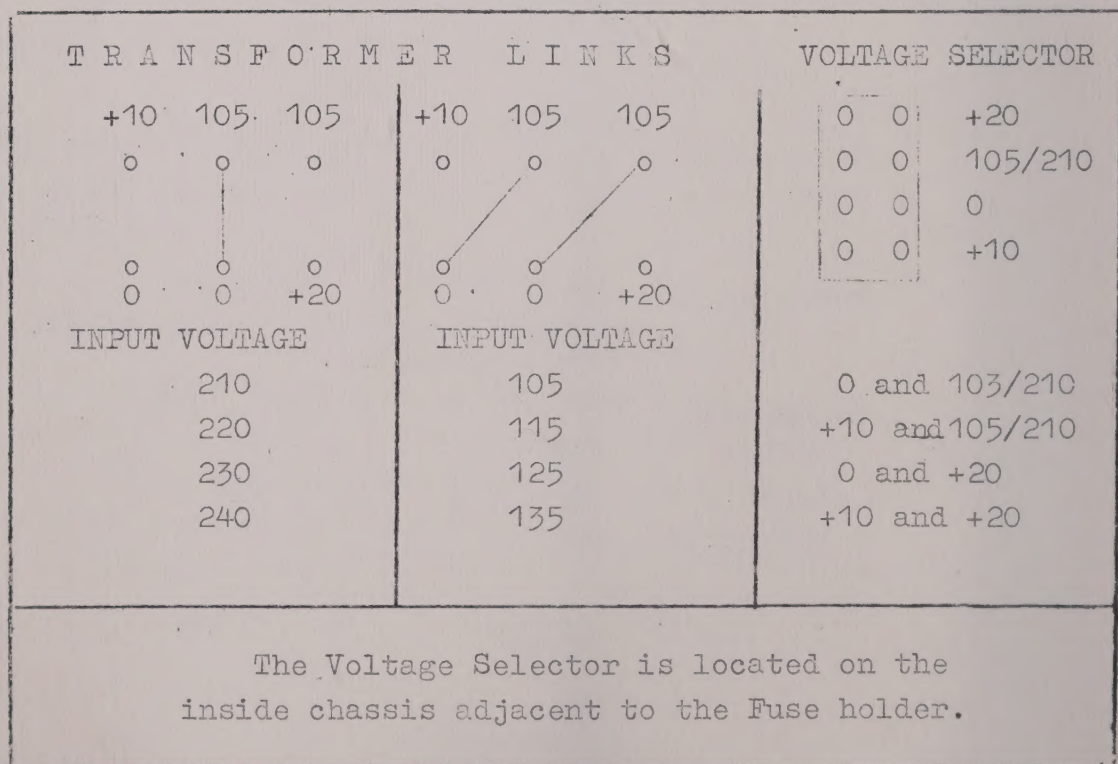
N.B. Fuse F1 = .5 amp for voltages between 210 and 240.

Fuse F1 = 1 amp for voltages between 105 and 135.

3.2. Check with the Meter Unit switched off, that the meter reads zero, if not adjust the mechanical "set zero" on the meter.

3.3. The Meter Unit is now ready for use with any one of the range of Dymar Plug-Ins.

FIG. 1.



PARTS LIST

CIRCUIT REF.

DESCRIPTION

RESISTORS

R1.	Carbon	560 Ω	$\pm 10\%$	$\frac{1}{2}W$
R2.	"	470 Ω	" "	"
R3.	"	820K Ω	" "	"
R4.	"	470 Ω	" "	"
R5.	"	470 Ω	" "	"
R6.	"	22K Ω	" "	1W
R7.	"	22K Ω	" "	1W
R8.	"	220K Ω	" "	$\frac{1}{2}W$
R9.	"	100K Ω	" "	"
R10.	"	4.7K Ω	" "	"
R11.	"	680 Ω	" "	"
R12.	"	1K Ω	" "	"
R13.	"	1K Ω	" "	"
R14.	"	470 Ω	" "	"
R15.	Hi-Stab	1.8K Ω	$\pm 5\%$	$\frac{1}{4}W$
R16.	Carbon	390 Ω	$\pm 10\%$	1W
R17.	"	AOT	" "	$\frac{1}{2}W$

RV1. Resistor Variable Carbon Linear 20K Ω RV2. " " " " 500 Ω RV3. " " " " 500 Ω CAPACITORS

C1/C2.	Dual Electrolytic	16 + 16 μF	450V
C3.	Polyester	0.1 μF	400V
C4.	Electrolytic	8 μF	350V
C5.	"	1250 μF	40V
C6.	Polyester	0.01 μF	160V
C7.	Electrolytic	100 μF	16V
C8.	"	200 μF	16V
C9.	Polyester	0.1 μF	160V

CIRCUIT REF.

DESCRIPTION

VALVES

V1.	Triode Pentode ECL82	Mullard
V2.	Neon Tube 85A2	"

SEMICONDUCTORS

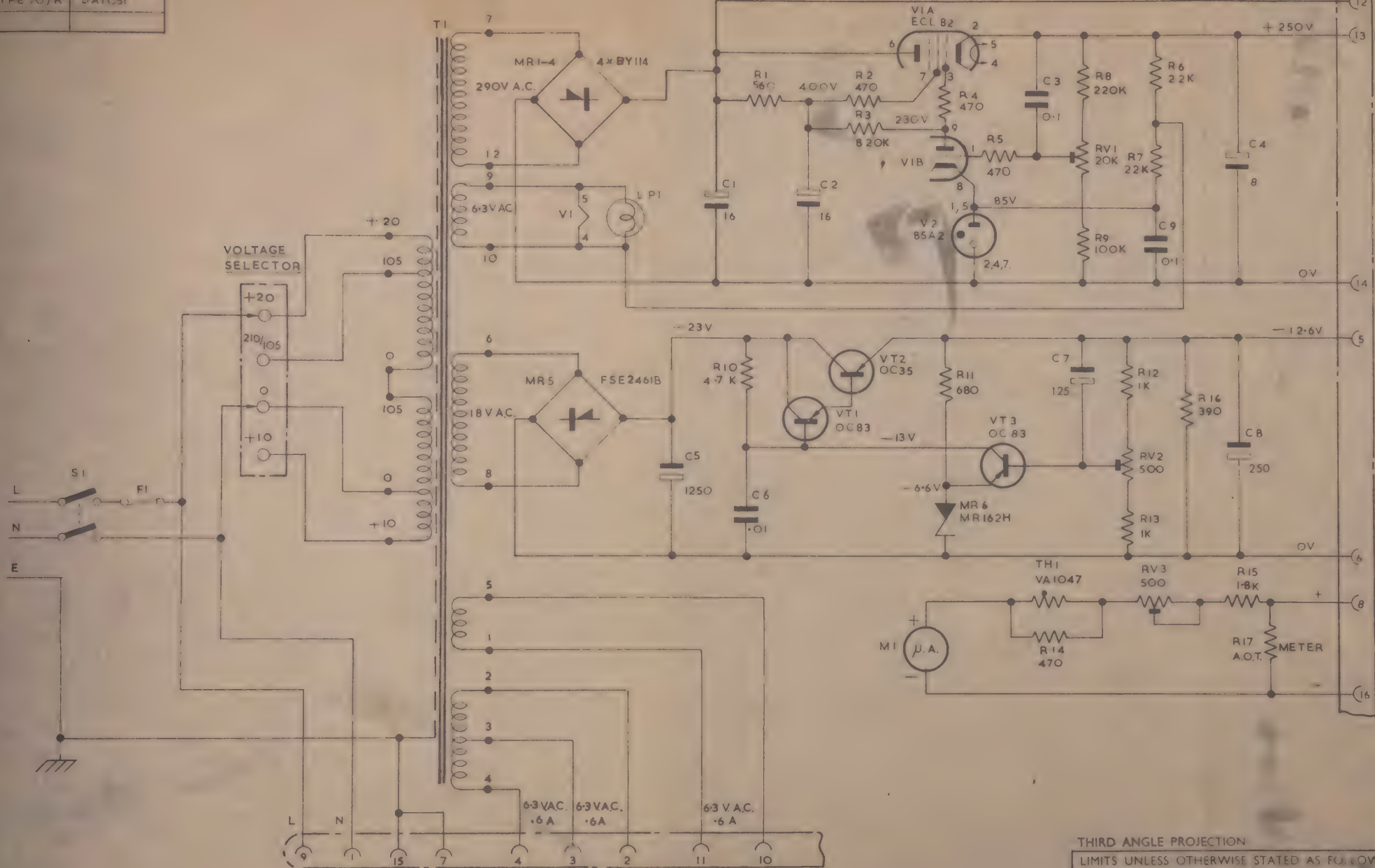
MR1/4	Silicon Diode BY114	Mullard
MR5	Selenium Rectifier	FSE 2461B STC
MR6	Zener Diode MR162H	A.E.I.

VT1	Germanium Transistor OC83	Mullard
VT2	" " OC35	"
VT3	" " OC83	"

MISCELLANEOUS

TH1	Thermistor VA1047	Mullard
T1.	Transformer Drg. No.BT.1021	Dymar
M1.	Meter Drg. No. BS.1154	Dymar
SK1.	Socket 16 way RSD16	McMurdo
SW1.	Switch Double Pole S277PD	Bulgin
F1.	Fuse Link 1 Amp F300/1A	Bulgin
LP1.	Lamp 6.3V 1W L.E.S.	

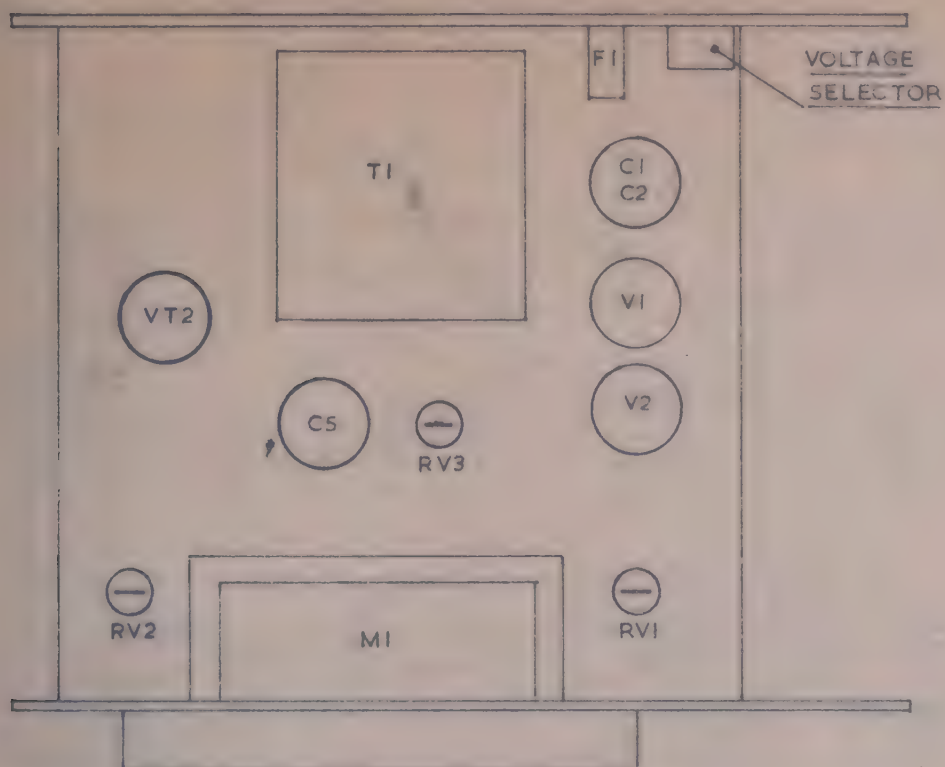
DRG. No.	
BC1020	
USED ON	ASSY DRG. No.
TYPE 70	DA1019
TYPE 70/R	DA1051



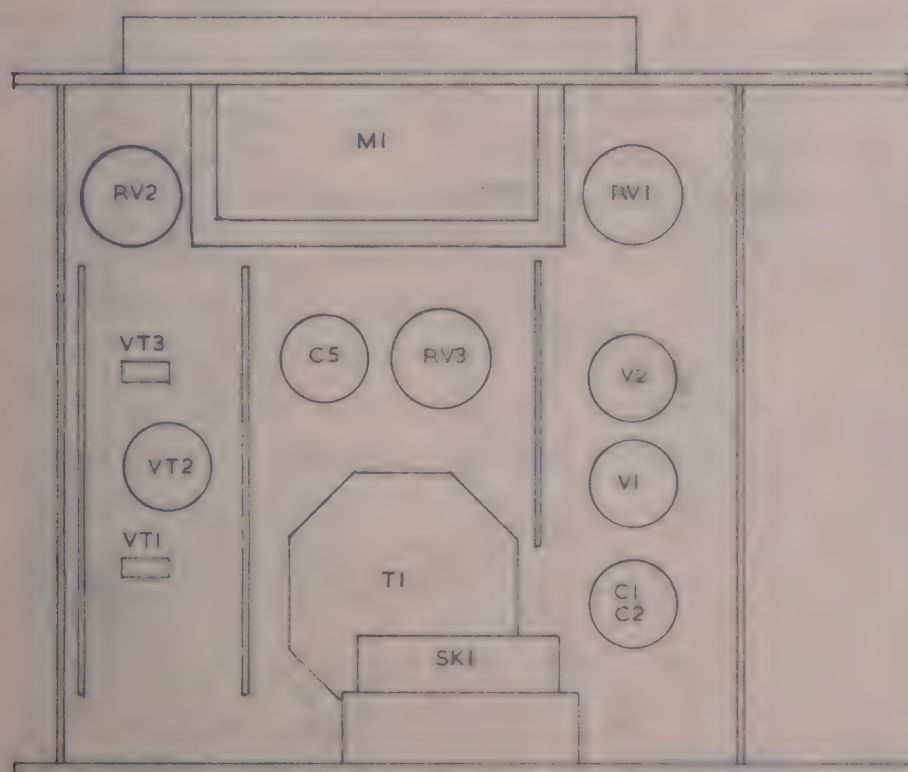
VOLTAGES SHOWN ARE TYPICAL FOR AN AVERAGE INSTRUMENT

THIRD ANGLE PROJECTION		DO NOT SCALE	
LIMITS UNLESS OTHERWISE STATED AS FOLLOWS		TITLE	
FRACTIONAL DIMENSIONS $\pm .015$		CIRCUIT DIAGRAM	
DECIMAL DIMENSIONS $\pm .005$		METER UNIT	
DIMENSIONS APPLY BEFORE PLATING UNLESS OTHERWISE STATED		DRG. No.	
MATERIAL		BC1020	
FINISH		DRN. D.A. RUSSELL	
ALL DIMENSIONS IN INCHES		DATE 26.1.65.	
SCALE		CHK'D	
DYMAR ELECTRONICS LTD.		DATE	
WATFORD, HERTS, ENGLAND.		APP'D.	
		DATE	

ISSUE	
A	4.11.64
REDRAWN	
C	3.2.65
D. 4.3.65	
C/N 70.1	
1.4.3.65.	
B	2. R17 ADDED
C/N 70/2	
10.8.65.	
3 C/N 70.6	
C	16.11.66
D	
E	
F	
G	
H	
J	
K	



VIEW ON TOP OF CHASSIS



VIEW UNDER CHASSIS

G U A R A N T E E

In lieu of any warranty, condition or liability implied by law, our liability in respect of any defect in or failure of the goods supplied, is limited to making good by replacement or repair defects which, under proper use by the original purchaser, appear therein and arise solely from faulty materials or workmanship within a period of twelve calendar months after the original goods shall have first been despatched, at the termination of which period all liability on our part ceases; provided always that such defective instruments are carefully packed and returned free to our Works unless otherwise arranged, and provided that they have not been tampered with in any way.

For components not of our manufacture we extend only such benefits as we may receive under any guarantee given to us by the makers thereof.

The liability of the Company for consequential loss or damage suffered by the Purchaser of goods supplied by it, howsoever sustained is hereby expressly excluded.

Our equipment has been designed and tested for use with the specific types of components supplied by us therein and no responsibility can be accepted for the performance of the equipment if other components are employed.

In the event of failure or malfunctioning of any equipment supplied by us please contact our Service Department, at the below stated address and give full details of the fault together with the Type and Serial number of the equipment in question.

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